AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of transforming between one or more point type sources and a line source in a transmission line structure, ~~characterized in that~~ the method ~~comprises~~ comprising:

inserting a transmission line path controller between a first parallel-plate waveguide section and a second parallel-plate waveguide section, the transmission line path controller comprising a curved side to which one end of each waveguide is coupled, the transmission line path controller further comprising a waveguide slot, one side of ~~which~~ said waveguide slot is a part of the curved side, the waveguide slot further coupling the waveguide ends that are coupled to the transmission line path controller~~, the method further comprising~~;

adjusting the curved side to get a desired path length between each different wave path of the one or more point sources and corresponding location of the line source.

2. (Currently Amended) A transmission line structure comprising a number of parallel plates comprising a first parallel-plate waveguide section and at least one first electromagnetic wave port of substantially point character at a first end of the first waveguide, the first waveguide propagating an electromagnetic wave entered at the at least one first port of the first end of the first waveguide towards a second end of the first waveguide in a first principal propagation direction, the structure further comprising a second parallel plate waveguide section and a second electromagnetic wave port of a predetermined line character at a first end of the second waveguide, the second waveguide propagating the electromagnetic wave in a second principal direction between a second end of the second waveguide and the second port ~~of~~ at the first end of the

second waveguide ~~an electromagnetic wave~~ which is entered at the at least one first port, ~~characterized in that~~wherein the plate structure comprises a transmission line path controller which controls a propagation path length of an electromagnetic wave passing through ~~it~~ the plate structure in relation to where the electromagnetic wave passes through the path controller, a first part of the path controller further changes the first principal propagation direction to a controller principal propagation direction for an electromagnetic wave entering the at least one first port, the first part of the path controller being coupled to the second end of the first waveguide and comprising a first slot in a first slot plane, the first slot having at least two curved sides, wherein the shape of the slot is arranged to be adjusted and thereby the relationship between the first port and the slot in order to create desired line sources.

3. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first slot plane is parallel to the plates of the first waveguide.

4. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first slot plane is symmetrically oriented in between the first principal propagation direction and the controller principal propagation direction.

5. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first principal propagation direction and the controller principal propagation direction are parallel.

6. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first principal propagation direction and the controller principal propagation direction ~~forms~~forming an angle between 0° and 180°.

7. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein a side of the first slot furthest away from the at least one first port, is curved in the first slot plane, forming a first curved side of the first part of the path controller.

8. (Currently Amended) The transmission line structure according to claim 7, ~~characterized in that~~wherein the at least one other curved side of the first slot is a side opposite the first curved side and is curved in a similar manner, the first slot thus forming a substantially uniformly formed waveguide slot.

9. (Currently Amended) The transmission line structure according to claim 7, ~~characterized in that~~wherein the first curved side of the first part of the path controller extends into the first waveguide and forms at least in part an end opposite to the first port end of the first waveguide.

10. (Currently Amended) The transmission line structure according to claim 7, ~~characterized in that~~wherein the first curved side of the first part of the path controller is curved along a first curved line in the first slot plane, and wherein in a planes parallel to the first slot plane a curve corresponding to the first curved line is similarly curved to the first curved line~~along the first curved line in these parallel planes, to the extension of the first curved side~~.

11. (Currently Amended) The transmission line structure according to claim 10, ~~characterized in that~~wherein the first curved lines, in the parallel planes, are aligned along a straight line parallel to a normal to the first slot plane.

12. (Currently Amended) The transmission line structure according to claim 10, ~~characterized in that~~wherein the first curved lines in the parallel planes are aligned along a bent line.

13. (Currently Amended) The transmission line structure according to claim 7, ~~characterized in that~~wherein the first curved side of the first part of the path controller is curved along a first curved line in the first slot plane, and in planes at an angle to the first slot plane along further curved lines in these planes to the extension of the first curved side.

14. (Currently Amended) The transmission line structure according claim 10, ~~characterized in that~~wherein the first curved line is parabolic.

15. (Currently Amended) The transmission line structure according to claim 10, ~~characterized in that~~wherein the first curved line is piecewise parabolic along the first curved side.

16. (Currently Amended) The transmission line structure according to claim 7, ~~characterized in that~~wherein the first curved side is symmetrical in relation to a plane defined by the first principal propagation direction and the controller principal propagation direction.

17. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first waveguide from the at least one first port flares out towards the first part of the path controller between the parallel plates.

18. (Currently Amended) The transmission line structure according to claim 17, ~~characterized in that~~wherein the transmission line path controller controls a propagation

path length between the at least one first port to each point in the second port in a predetermined controlled manner such that a predetermined line source is formed in the second port.

19. (Currently Amended) The transmission line structure according to claim 18, ~~characterized in that~~wherein the transmission line path controller controls the propagation path length such that the propagation path length is substantially equal, independent of an electromagnetic wave propagation direction in the flared first waveguide.

20. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the transmission line structure comprises more than one first port.

21. (currently amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the at least one first port has an asymmetrical feed relationship with the first waveguide.

22. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the at least one first port has a symmetrical feed relationship with the first waveguide.

23. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the waveguides of the transmission line structure are aligned such that the first principal propagation direction, the second principal propagation direction and the controller principal propagation direction, form a plane which is perpendicular with the plates of the waveguides.

24. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first waveguide and the second waveguide are aligned in relation to each other such that a projection of the first principal propagation direction and a projection of the second principal propagation direction onto the slot plane along the plane's normal, form an angle with each other separate from zero on the plane.

25. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the first part of the path controller is also coupled to the second end of the second waveguide and in that the controller principal propagation direction is the same as the second principal propagation direction.

26. (Currently Amended) The transmission line structure according to claim 25, ~~characterized in that~~wherein the first curved side of the first part of the path controller extends into the second waveguide and ~~forms~~ forming at least in part an end opposite the second port end of the second waveguide.

27. (Currently Amended) The transmission line structure according to claim 25, ~~characterized in that~~wherein the parallel plates of the first waveguide are parallel with the parallel plates of the second waveguide.

28. (Currently Amended) The transmission line structure according to claim 25, ~~characterized in that~~wherein the parallel plates of the first waveguide form an angle with the parallel plates of the second waveguide which is different from zero.

29. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the transmission line structure comprises a third parallel-plate waveguide section and in that the transmission line path controller comprises a second part comprising a second slot in a second slot plane, and in that the first part of

the path controller further being coupled to a first end of the third waveguide, a second end of the third waveguide being coupled to the second part of the path controller, and in that the second part of the path controller being coupled to the second end of the second waveguide, the controller principal propagation direction for an electromagnetic wave entering the at least one first port is in a direction from the first end of the third waveguide towards the second end of the third waveguide.

30. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein the second slot plane is parallel to the plates of the third waveguide.

31. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein the second slot plane is symmetrically oriented between the parallel plates of the second and third waveguides.

32. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein the first waveguide and the third waveguide are aligned in relation to each other such that a projection of the first principal propagation direction and a projection of the controller principal propagation direction onto a plane parallel to the plates of the first parallel-plate waveguide along the plane's normal, form an angle with each other separate from zero on the plane.

33. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein the parallel plates of the first waveguide are parallel with the parallel plates of the second waveguide.

34. (Currently Amended) The transmission line structure according to claim 33, ~~characterized in that~~wherein the parallel plates of the first waveguide form an angle with the parallel plates of the third waveguide which is different from zero.

35. (Currently Amended) The transmission line structure according to claim 33, ~~characterized in that~~wherein the parallel plates of the first waveguide are parallel with the parallel plates of the third waveguide.

36. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein the parallel plates of the first waveguide form an angle with the parallel plates of the second waveguide which is different from zero.

37. (Currently Amended) The transmission line structure according to claim 36, ~~characterized in that~~wherein the parallel plates of the first waveguide form an angle with the parallel plates of the third waveguide which is different from zero.

38. (Currently Amended) The transmission line structure according to claim 36, ~~characterized in that~~wherein the parallel plates of the first waveguide are parallel with the parallel plates of the third waveguide.

39. (Currently Amended) The transmission line structure according to claim 36, ~~characterized in that~~wherein the parallel plates of the second waveguide are parallel with the parallel plates of the third waveguide.

40. (Currently Amended) The transmission line structure according to claim 29, ~~characterized in that~~wherein a side of the second slot furthest away from the second port, is curved in the second slot plane, forming a second curved side of the second part of the path controller.

41. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the at least one other curved side of the second slot is a side opposite the second curved side and is curved in a similar manner, the second slot thus forming a substantially uniformly formed waveguide slot.

42. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the second curved side of the second part of the path controller extends into the second waveguide and forming at least in part an end opposite the second port end of the second waveguide.

43. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the second curved side of the second part of the path controller is curved along a second curved line in the second slot plane, and in planes parallel to the second slot plane along the second curved line in these parallel planes to the extension of the second curved side.

44. (Currently Amended) The transmission line structure according to claim 43, ~~characterized in that~~wherein the second curved lines in the parallel planes are aligned along a straight line parallel to a normal to the second slot plane.

45. (Currently Amended) The transmission line structure according to claim 43, ~~characterized in that~~wherein the second curved lines in the parallel planes are aligned along a bent line.

46. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the second curved side of the second part of the path controller is curved along a second curved line in the second slot plane, and in planes at

an angle to the second slot plane along further curved lines in these planes to the extension of the second curved side.

47. (Currently Amended) The transmission line structure according to claim 43, ~~characterized in that~~wherein the second curved line is parabolic.

48. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the fi
rst curved side and the second curved side are formed such that the path controller forms a Cassegrain structure.

49. (Currently Amended) The transmission line structure according to claim 40, ~~characterized in that~~wherein the first curved side and the second curved side are formed such that the path controller forms a Gregorian structure.

50. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein each coupling between a path controller part and a waveguide comprises appropriate matchings.

51. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the transmission line structure is of an H-plane type.

52. (Currently Amended) The transmission line structure according to claim 2, ~~characterized in that~~wherein the transmission line structure is of an E-plane type.

53. (Currently Amended) An antenna, ~~characterized in that~~wherein the antenna comprises a transmission line structure according to claim 2.